

THE FOOD OF THE BLACK WIDOW SPIDER ON WHIDBY ISLAND, WASHINGTON

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On Whidby Island, Washington, the Black Widow spider (*Latrodectus mactans* F.¹) has been found only along the shoreline for a distance of about two miles on the western side of the island opposite the village of Coupeville. Here the land rises from the beach to a height of about 250 feet in a steep, grassy slope, which is well-drained and exposed to the sun. The spiders occur at the base of and on the surface of this slope under pieces of logs or bark.

Continuing the investigation commenced by Exline and Hatch² on the food of the Black Widow spider on nearby San Juan Island, the authors collected the remains of 722 individual arthropods from eleven nests: seven in July 1935, two in August 1935, and two in February 1936. These were glued on rectangles of cardboard, about 6.5 mm. wide by 12 mm. long, which were then mounted on insect pins, somewhat after the method employed by Frost³ in his study of the insect content of frog's stomachs.

Thirty-one species of arthropods, over three-fourths of them beetles, were recognized in this material, which is listed below and which we feel throws some light on the food habits of the spider in this locality. Over half (56%) of the individuals recovered were the tenebrionid, *Coniontis ovalis* LeC., which was likewise the dominant species in the spider's food on San Juan Island. Over forty per cent of the remainder were the carabid, *Harpalus cautus* Dej., with the other species trailing, as indicated in the subjoined list, where the numbers in parentheses indicate the number of individuals of each species taken where that was greater than one.

The small number of grasshoppers taken in the nests (five speci-

¹ Presumably the subsp. *hesperus* of Chamberlin and Ivie, Bull. Univ. Utah Biol. Ser. III (1), 1935, p. 15.

² Jour. N. Y. Ent. Soc. XLII, 1934, pp. 449-450.

³ Jour. N. Y. Ent. Soc. XXXII, 1924, pp. 174-185, pl. XIV.

mens of *Melanoplus*)—though grasshoppers are very numerous in this habitat—suggests that one treat critically Strickland's suggestion,⁴ based on the finding of eleven specimens of *Melanoplus* in a Black Widow spider nest in Colorado by Milzer,⁵ that the abundance of the spider bears any special relation to the abundance of the grasshopper.

On the negative side, our data would seem to show that the Black Widow spider avoids sow bugs, which were likewise very numerous in the area. The remains of only a single specimen of *Porcellio* were found in any of the nests.

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LIST OF SPECIES

ISOPODA: *Porcellio scaber* Latr.

ORTHOPTERA: *Melanoplus mexicanus bilituratus* F. Walker (5).

DERMAPTERA: *Forficula auricularia* L. (6).

CARABIDÆ: *Carabus tædatus vancouvericus* Csiki (27), *Notiophilus semiopacus* Esch. (2), *Nebria virescens* Horn, *Pterostichus algidus* LeC. (5), *Amara obesa* Say (18), *A. patruelis subdepressa* Csy., *A. californica* Dej. (2), *A. remotestriata* (20), *A. near musculus* Say, *A. near cupreolata* Putz., *Calathus ruficollis* Dej. (24), *Harpalus cautus* Dej. (134), *Dicheirus piceus* Men.

MELOIDÆ: *Melæ strigulosus* Mann.

ELATERIDÆ: *Ludius aripennis* Kby. (3), *Cardiophorus tenebrosus* LeC.

BUPRESTIDÆ: *Buprestis adjecta* LeC.

⁴ Can. Ent. LXVIII, 1936, pp. 284-285.

⁵ Science 80, 1934, p. 403.

TENEBRIONIDÆ: *Eleodes rotundipennis* LeC. (3), *Coniontis ovalis* LeC. (407).

SCARABÆIDÆ: *Serica anthracina* LeC. (41), *Polyphylla decemlineata* Say (2).

CURCULIONIDÆ: *Brachyrhinus ovatus* L., *Phytonomus zoilus* Scap. (5), *Hyperodes* sp.

HYMENOPTERA: *Bremus occidentalis* Greene, *Augochlora radiata* Say (3).

DIPTERA: *Stenopogon longulus* Loew.

ARANEIDEA: *Drassidæ*.

